(c) REMARKS

The claims are 1-12 and 14-24 with claims 1-4 and 15-18 being independent. The subject matter of claim 13 has been added to the independent claims. In addition, an added feature in the preamble that the process or apparatus is for controlling the film formation temperature is supported, inter alia, on page 14, lines 3-11 and page 52, lines 4-15. The feature of transporting the substrate through the reactor during film-forming formation and means therefor, is supported in the working Examples such as page 32, lines 6-12 and page 32, line 13 to page 33, line 17. Reconsideration of the claims is expressly requested.

The Examiner has repeated the restriction requirement. The grounds for restriction are respectfully traversed.

Under M.P.E.P. §806.05(e), a process and an apparatus for its practice can be shown to be distinct only when the process, as claimed, can be practiced by another materially different apparatus or the apparatus, as claimed, can be used to practice another materially different process. These circumstances are not present. Each of the instant process steps is echoed in an element of the instant apparatus as claimed and each of the apparatus elements is echoed in a corresponding process step. Both embodiments are directed to, inter alia, forming a deposited film of semiconductor layers having the same conductivity type. The preamble of each embodiment is directed to controlling film formation temperature. Clearly, there is no material difference between these embodiments and, accordingly, the burden is on the Examiner to document another materially different process or apparatus or to withdraw the requirement.

Claims 1, 2, 5 and 9-14 were rejected as anticipated by Sakai '482. Claims 1, 6-11 and 13 were rejected as anticipated by Moslehi '609. Claims 3 and 4 were rejected as obvious over Sakai, while claim 3 was also rejected as obvious over Moslehi. The grounds of rejection are respectfully traversed.

Prior to addressing the grounds of rejection, Applicant wishes to briefly review certain key features and advantages of the present claimed invention. As noted on page 12, lines 18-26 of the specification, where substrates are transported through the reactor and films are form over a long period of time, the films tend to be formed where the environmental temperature is very high. Therefore, it is difficult to control the substrate temperature and excessive or fluctuating temperatures have caused reductions in the characteristics of the deposited film. As noted on page 14, the claimed feature "film formation temperature" refers to environmental temperature including at least one of substrate temperature, electrode temperature and inner-wall temperature, or the average temperature of these. This is also recited at page 52, lines 4-15. In order to meet this temperature control problem and others, a plurality of discharge means are disposed in the reactor in order to better control film formation temperature. When the substrate is conveyed through the reactor during film formation, then a deposited film is formed of semiconductive layers having the same conductivity type.

Sakai '482 fails to teach or suggest a number of key features and advantages of the present invention and cannot operate as an anticipation. For example, Sakai fails to teach or suggest controlling film formation temperature. Instead, Sakai forms uniform layers (column 5) by maintaining the same voltage throughout a wide gas pressure region

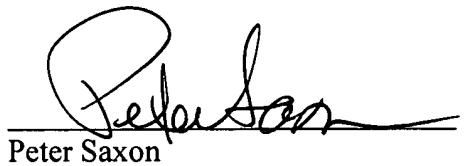
(column 7). In addition, Sakai fails to teach or suggest forming semiconductor layers of the same conductivity type by utilizing plural discharge means to generate films. As set forth in column 8, Sakai is directed to forming amorphous silicon, silicon oxide or silicon nitride films. Further, as noted in Sakai column 5, lines 49-59, one moves the voltage from one electrode to another to sequentially send generated radicals from one end of the deposition substrate to the other, to form a uniform film. There is no recognition or appreciation of controlling film formation temperature in order to achieve better film characteristics.

Moslehi fails to teach transporting a substrate through the reactor during film formation. Instead, wafer 12 is fixed within the reactor during the film formation process. Further, Moslehi fails to teach employing a plurality of discharge means disposed in the reactor and alternately applying electric power to discharge means within the reactor. The plasma forming means in Moslehi are external to the reactor as shown by sources S1-S4. In column 12, of Moslehi it is further disclosed that the semiconductor wafer 12 is clamped against the chuck surface during processing. Accordingly, Moslebhi is directed to a batch process, not a continuous wafer forming process and is not subject to the same problem of temperature control.

Accordingly, Applicants submit that none of the references, disclose or suggest the present claimed invention nor render it unpatentable. Accordingly, it is respectfully requested that the claims be allowed and the case be passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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